

## Alessandra Gallo



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**Current Position:** Researcher

**Current Affiliation:**

Department of Biology and Evolution of Marine Organisms, Stazione Zoologica Anton Dohrn, Napoli (Italy)

### Education/Training/Experience

Institute and Location	Degree / Function	Year	Field of Study
University of Naples “Federico II”, Napoli, Italy	Bachelor, with laude	2003-2007	Biological Sciences
University of Naples “Federico II”, Napoli, Italy	Master, with laude	2007-2009	Biology
University of Naples “Federico II”, Napoli, Italy	PhD	2010-2013	Model organisms in biomedical and veterinary research
Campus vétérinaire de Lyon, France	Visiting Scientist	2013	Biotechnologies of reproduction
Biology Department, University of Naples “Federico II”, Napoli, Italy	Postdoc	2014	Assessment of the environment health state through eco-toxicological tests on reproductive events of bioindicator organisms
Stazione Zoologica Anton Dohrn, Napoli, Italy	Postdoc	2015-2019	Impact of environmental stress on reproductive processes of marine invertebrates

Stazione Zoologica Anton Dohrn, Napoli, Italy	Researcher	2019-present	
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### **Appointments and awards**

2014 Member of the scientific and organizing committee of the Workshop “Inquinamento Biologico e Sostenibilità delle Risorse Marine”

2016 Aldo Fasolo Prize for young researchers awarded by SZN

2017 International post-doc awards for attending and presenting at the International Congress on Invertebrate Reproduction and Development 2017

2019 Coordinator of the first International Summer School on Marine Ecotoxicology

### **Other**

Guest Editor of the special issue ‘Effects of ecosystem degradation and environmental stress on reproduction and development’ for Molecular Reproduction and Development 2018

Guest Editor of the special issue ‘Marine Drugs and Ion Currents’ for Marine Drugs 2017

Participation in research projects:

- Prin 2010-2011 "The systems biology in the study of xenobiotics effects in marine organisms for assessment of environmental health: biotechnological applications for potential strategies for restoration".
- Italian Ministry of Research 2017-2020 ‘Environmental restoration of Bagnoli-Coroglio Bay, site of national interest (ABBaCo)’
- Italian Ministry of Research 2017-2018 ‘New model organisms for the scientific research: culture, ecology, physiology and genomic characterization (ModRes)’.

Reviewer for 13 ISI-journals in reproduction and environmental science.

### **Students’ Supervision**

Supervision of 3 master students and 7 undergraduate students of the University of Naples Federico II; Supervisor for an Intership student (University of Naples Federico II).

### **Publications**

Author of: 21 publications on ISI-journals, 6 editorials, 2 book chapters and 1 encyclopedia chapter.

**List of publications of the last 10 years:**

Silvestre, F., **Gallo A**, Cuomo A, Covino, T. & Tosti E. (2011). Role of cyclic AMP in the maturation of *Ciona intestinalis* oocytes. *Zygote*, 19(4): 365-71.

Tosti E, **Gallo A**, Silvestre F. (2011). Ion currents involved in oocyte maturation, fertilization and early developmental stages of the ascidian *Ciona intestinalis*. *Mol. Reprod. Dev.*, 78(10-11): 854-860.

**Gallo A**, Silvestre F, Cuomo A, Papoff F, Tosti E. Impact of metals on the reproductive mechanism of *Ciona intestinalis*. (2011). *Mar Ecol.*, 32: 222-231.

**Gallo A**, Costantini M. (2012). Glycobiology of reproductive processes in marine animals: the state of the art. *Mar. Drugs*, 10(12): 2861-2892.

Tosti E, Boni R, **Gallo A**, Silvestre F. (2013). Ion currents modulating oocyte maturation in animals. *Syst. Biol. Reprod. Med.*, 59(2): 61-68.

**Gallo A**, Russo GL, Tosti E. T-type Ca<sup>2+</sup> current activity during oocyte growth and maturation in the ascidian *Styela plicata*. (2013). *Plos One*, 8(1): 54e604.

**Gallo A**, Tosti E. (2013). Adverse effect of antifouling compounds on the reproductive mechanisms of the ascidian *Ciona intestinalis*. *Mar Drugs*, 11: 3554-3568.

Bezzaouia A\*, **Gallo A\***, Silvestre F, Tekaya S, Tosti E. (2014). Distribution pattern and activity of mitochondria during oocyte growth and maturation in the ascidian *Styela plicata*. *Zygote*, 22(04): 462-469. \*These authors contributed equally to this work.

**Gallo A**, Tosti E. (2015). Reprotoxicity of the antifoulant chlorothalonil in ascidians: An Ecological Risk Assessment. *Plos One*, 10(4): e0123074.

**Gallo A**, Tosti E. (2015). Ion currents involved in gamete physiology. *Int. J Dev. Biol.* 59:261-270.

Boni R, **Gallo A**, Cecchini S. 2016. Kinetic activity, membrane mitochondrial potential, lipid peroxidation, intracellular pH and calcium of frozen/thawed bovine spermatozoa treated with metabolic enhancers. *Andrology* 5(1): 133-145.

Tosti E, Boni R, **Gallo A**. 2016. Ion currents in embryo development. *Birth Defects Research Part C: Embryo Today* 108:6-18.

Boni R, **Gallo A**, Montanino M, Macina A, Tosti E. 2016. Dynamic changes of sperm quality in *Mytilus galloprovincialis* under continuous thermal stress. *Molecular Reproduction and Development* 83:162–173.

**Gallo A.**, Boni R., Buttino I., Tosti E. (2016). Spermotoxicity of nickel nanoparticles in the marine invertebrate *Ciona intestinalis* (ascidians). *Nanotoxicology*, 10(8): 1096–1104.

**Gallo A., Boni R., Tosti E (2017)**  $\mu$ -Conotoxins Modulating Sodium Currents in Pain Perception and Transmission: A Therapeutic Potential. *Marine Drugs* 15 (10), 295. Cover dedicated

**Gallo A., Boni R., Tosti E. (2018)** Sperm viability assessment in marine invertebrates by fluorescent staining and spectrofluorimetry: A promising tool for assessing marine pollution impact. *Ecotoxicology and Environmental Safety* 147, 407-412.

Rotini A., **Gallo A.**, Parlapiano, I., Berducci, M. T., Boni, R., Tosti, E., Prato E., Maggio C., Cicero A.M., Migliore L., Manfra, L. (2018). Insights into the CuO nanoparticle ecotoxicity with suitable marine model species. *Ecotoxicology and Environmental Safety*, 147, 852-860.

**Gallo, A.,** Menezo, Y., Dale, B., Coppola, G., Dattilo, M., Tosti, E., & Boni, R. (2018). Metabolic enhancers supporting 1 carbon cycle affect sperm functionality: an in vitro comparative study. *Scientific reports*, 8(1), 11769.

**Gallo A.** (2018). Toxicity of marine pollutants on the ascidian oocyte physiology: an electrophysiological approach. *Zygote* 26, 14-23.

**Gallo, A.,** Manfra, L., Boni, R., Rotini, A., Migliore, L. & Tosti, E. (2018). Cytotoxicity and genotoxicity of CuO nanoparticles in sea urchin spermatozoa through oxidative stress. *Environment International* 118, 325-333.

**Gallo, A.,** & Tosti, E. (2019). Effects of ecosystem stress on reproduction and development. *Molecular reproduction and development*.

### ***Book chapters***

Gallo A and Tosti E. 2019. Reproductive processes of marine animals as biomarker for environmental stress impact. In: Se-Kwon Kim, Ed. *Encyclopedia of Marine Biotechnology*. United States: Wiley-Blackwell, ISBN: 978-1-119-14377-2. In press.

Gallo A. (2016). Marine Glycoconjugates in gamete physiology and fertilization. In: Se-Kwon Kim, Ed. *Marine Glycobiology: Principles and Applications*. Boca Raton USA: CRC Press, Taylor & Francis Group; Chapter 3; pp 25-37. ISBN 9781498709613.

Gallo A and Tosti E. (2015). Cytoskeletal elements and the reproductive success in animals. In: Schatten H, Ed. *The cytoskeleton in health and disease*. New York: Springer Science + Business Media LLC; Chapter 6, pp. 147-166. ISBN 978-1-4939-2904-7.

### ***Websites or online articles***

Gallo A, Boni R, Tosti E. (2018). Discriminating live and dead sperm in ecotoxicology. *Atlas of Science*. <https://atlasofscience.org/discriminating-live-and-dead-sperm-in-ecotoxicology/>.

Tosti E, Boni R, Gallo A. (2017). Gamete activation: what else?. *Atlas of Science*. <https://atlasofscience.org/gamete-activation-what-else/>.

### ***Conference proceedings***

- Guerriero G, Gallo A, Roselli CE, D'Angelo R, Ciarcia G. 2015. Reproductive health assessment and quantitative real-time PCR analysis of estrogen receptor mRNA expression in *Mytilus galloprovincialis* gametes. *Experimental and Clinical Endocrinology & Diabetes*, 123: LB\_02.
- Gallo A & Tosti E. 2014. Reproduction of ascidians as a model for toxicological studies. *Atti delle Giornate di Studio "EMERGENZA AMBIENTE: L'ECOTOSSICOLOGIA COME STRUMENTO DI GESTIONE. 6° edizione, ISPRA, Livorno, pp 46-51.*
- Guerriero G, Trocchia S, Rabbito D, Petrella M, Gallo A, Madonna A, Ciarcia G. 2014. Barcoding di alcuni pesci del tirreno centrale (golfo di Gaeta). *Biologia Marina Mediterranea*, volume 21(1) p. 121-122.

### ***Publications non ISI***

- Tosti E, Boni R, Gallo A. 2017. Gamete activation: what else? *Atlas of Science* 1-3.
- Gallo A, Tosti E. 2016A. La *Ciona intestinalis* (ascidie) come organismo modello indicatore di inquinamento marino. *Biologi Italiani*, volume 2, pp: 34-38.
- Madonna A, Alwany MA, Rabbito D, Trocchia S, Labar S, Abdel-Gawad F, D'Angelo R, Gallo A, Guerriero G, Ciarcia G. 2015. Caves Biodiversity in the Marine Area of Riviera d'Ulisse Regional Park, Italy: Grotta del Maresciallo Overview. *Journal of Biodiversity & Endangered Species* 3:153.

### ***Editorials***

- Gallo A, Tosti E. 2016. Adverse Effect of Ocean Acidification on Marine Organisms. *Journal of Marine Science Research and Development* 6:2.
- Gallo A, Tosti E. 2016. New Markers for the Assessment of Sperm Quality. *Journal of Fertilization: In Vitro - IVF-Worldwide, Reproductive Medicine, Genetics & Stem Cell Biology* 4:4.
- Gallo A and Tosti E. 2015. Antifouling Compounds Endangering Marine Invertebrates Reproduction. *Journal of Marine Science Research and Development* 5: e133.
- Gallo A, Tosti E. 2015. The ascidian *Ciona intestinalis* as a model for ecotoxicological bioassays. *Journal of Marine Science Research and Development* 5:3.
- Tosti E, Costantini M, Gallo A. 2013. Is the Sea an Eldorado for Bioactive Substances? *Journal of Marine Science Research and Development* 2:5.
- Tosti E and Gallo A. 2012. Best biomarker and bioindicator for marine environmental pollution. *Journal of Marine Science Research and Development* 2:2.